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MESTRADO INTEGRADO EM PSICOLOGIA

Secção de Psicologia dos Recursos Humanos, do Trabalho e das Organizações

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Dissertação Orientada pelo Professor Doutor Luís Alberto Santos Curral

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Abstract

Self-Leadership, a general combination of self-regulatory strategies, has been related to individual creativity, often defined as the production of novel, useful and adequate ideas. Despite having been related, there are some questions regarding the relation between self-leadership and creativity that still need further clarification. Namely, the role that active delay and flow play in this relation. Considering this, this study aims to understand how these variables relate to each other.

Given the above, the present study considered the existence of a sequential mediation between self-leadership, active delay, flow and ultimately individual creativity. To do so, 87 Portuguese undergraduate psychology students participated in a two time point study.

Regarding the mediation model presented, the results were not significant. However, evidence was found regarding the positive relation between self-leadership and flow.

In this way, the present study contributes to the emergence of a new relationship, and draws attention for the need for further investigation concerning the relation between self-leadership and individual creativity and the role of the construct of active delay on this relation, because, despite the inconclusive results here presented, the relation cannot be yet discarded.

Keywords: Self-leadership; Active Delay; Flow; Individual Creativity

Resumo

A Auto-liderança, definida como um conjunto de estratégias de auto-regulação, contempla três dimensões distintas: estratégias comportamentais, de recompensa natural, e de padrões de pensamento construtivo. Estas estratégias têm como objetivo potenciar a auto-motivação necessária para desempenhar as respetivas tarefas com sucesso (Manz & Neck, 2004). Nos últimos anos, a auto-liderança tem vindo a ser relacionada com a criatividade individual (Manz & Sims, 2001; Carmeli, Meitar & Weisberg, 2006), habitualmente definida como a produção de ideias originais, uteis e aplicáveis (Zhou & Su, 2010). Contudo, apesar da relação argumentada, existem ainda questões relativas à relação entre a auto-liderança e criatividade que precisam de um maior esclarecimento. Nomeadamente, perceber o papel que o adiamento ativo (e.g Kim & Seo, 2013) e o *flow* (Csikszentmihalyi, 2000; Csikszentmihalyi, 2013) desempenham nesta relação. Perante isto, este estudo tem como objetivo compreender como estas variáveis se relacionam entre si.

O adiamento ativo é uma variável ainda pouco estudada que deriva da procrastinação, vista como uma falha de auto-regulação associada a mecanismos ego-defensivos, que permitem aos indivíduos justificarem potenciais fracassos ao nível das tarefas que desempenham (Ferrari & Tice, 2000). Por seu turno, o adiamento ativo, previamente intitulado de procrastinação ativa, é tido como uma estratégia usada por indivíduos que adiam as suas atividades propositadamente, focando-se noutras tarefas, pois se sentem mais motivados e comprometidos com o trabalho, quando se encontram sobre pressão (Chu & Choi, 2005). É visto como um fenómeno multifacetado que inclui fatores cognitivos (decisão de adiar a tarefa); fatores afetivos (preferência pela pressão), e fatores comportamentais (cumprem os prazos), originando resultados positivos (Chu & Choi, 2005). Tendo isto em conta, o adiamento ativo pode ser considerado e estar relacionado com algumas estratégias de auto-regulação eficazes (Corkin, , Yu, & Lindt, 2011; Seo, 2013). Os resultados de um recente estudo, apontaram para uma a possível relação entre estratégias de adiamento ativo e a entrada no estado de *flow* (Kim e Seo, 2013). Este último, o *flow*, é entendido como um estado de concentração máximo, despoletado pela emergência de um desafio, que é percebido como possível de ultrapassar. Desta forma, atinge-se um equilíbrio entre as nossas capacidades e o desafio em mãos, que, por sua vez, nos faz entrar num estado de absorção com a tarefa (Nakamura & Csikszentmihalyi, 2000).

Em suma, considerando que (1) existe uma relação entre a auto-liderança e a criatividade individual (Manz & Sims, 2001; Carmeli, Meitar & Weisberg, 2006), que (2), o adiamento ativo, à semelhança das estratégias de auto-liderança, poder ser visto como uma estratégia auto-regulada adaptativa para determinados indivíduos (Corkin, , Yu, & Lindt, 2011; Seo, 2013), que (3), este, por sua vez está positivamente relacionado com o *flow* (Kim e Seo, 2013) e, que (4), a literatura aponta para a existência de uma relação facilitadora de criatividade, quando um individuo experiencia o estado de *flow* (MacDonald, 2006; Hamilton, 2013), construiu-se o modelo que se propôs estudar.

Assim, no presente estudo foi examinada a relação entre auto-liderança e criatividade individual, mediada dupla e sequencialmente pelo adiamento ativo e *o* flow, respetivamente, em 87 estudantes portugueses do 2º ano da licenciatura em psicologia da universidade de lisboa.

Por forma a aceder às referidas variáveis, a recolha de dados foi dividida em duas fases no tempo.

Na primeira fase foram distribuídos pelos participantes questionários de auto-reporte contendo três seções. A primeira remetia para a auto-liderança (Marques-Quinteiro, Curral & Passos, 2011); a segunda parte procurava aceder ao nível de adiamento ativo de cada participante (Choi & Moran, 2009), e a terceira e, última parte, referia-se a dados demográficos e caracterização da amostra. Após completarem o questionário, era-lhes entregue um caso prático que cada participante deveria resolver no prazo de três semanas (altura da segunda recolha).

Na segunda fase, a recolha de dados contemplou uma nova distribuição, pelos participantes, de um novo questionário de auto-reporte sobre a variável *flow* (Gouveia, Pais-Ribeiro, Maruqes & Carvalho, 2012). Paralelamente recolheram-se as respostas ao caso prático, posteriormente avaliadas por dois especialistas na área, para acederem ao nível de criatividade das respostas (Braia, Curral & Gomes, 2015).

No que concerne ao modelo de mediação apresentado, os resultados não se mostraram significativos. No entanto, foram encontradas algumas evidências de uma relação positiva entre a auto-liderança e *flow*, i.e. quanto maior for a tendência para uma pessoa usar estratégias de auto-liderança, maior será a probabilidade de no decorrer

dessas mesmas tarefas experienciar o estado de fluxo. Para além disto, os resultados sugerem que a auto-liderança poderá predizer o *flow*. Não obstante, esta é ainda uma relação pouco *documentada* em anteriores estudos, precisando de uma melhor clarificação futura.

Desta forma, o presente estudo contribui para a emergência de uma nova relação (auto-liderança e *flow*), e chama a atenção para a necessidade de mais investigação no que toca a relação entre a auto-liderança e criatividade individual e o papel do adiamento ativo nesta relação, porque, apesar de os resultados inconclusivos apresentados, a relação não ser ainda pode descartada.

As principais limitações do presente estudo prendem-se com o caso prático. Nomeadamente, utilizou-se um caso prático que não apresentava qualquer peso na nota final dos alunos na cadeira, por isto, poderá ter sido negligenciada a sua importância por parte dos sujeitos. Para além disto, poderia ser menos indicado para este público-alvo, i.e. era um caso prático no qual se pediam ideias criativas para uma melhor gestão de um espaço teatral. Assim sendo, ainda que seja um caso geral sobre a área, bem como seja algo recorrente em campanhas de ideias pedidas ao público em geral, o desempenho pode ter sido influenciado pelo nível de conhecimento em gestão e não no nível de criatividade individual, o que torna difícil conseguir diferenciar participantes. Assim, futuramente, sugere-se que a tarefa apresentada aos participantes deva ter peso avaliativo bem como deva ser aplicada ao contexto de trabalho dos mesmos, isto tendo em conta o modelo de criatividade de Amabile (1983) que prevê que as competências no domínio específico sejam relevantes e imprescindíveis para um desempenho criativo (Amabile, 1983). De igual maneira, outras formas de aceder a criatividade individual devem ser tentadas, explorando igualmente outros métodos para avaliar as outras variáveis aqui estudadas e que não apresentaram os resultados esperados.

Palavras-Chave: Auto-liderança, Adiamento Ativo, Flow, Criatividade Individual.

Introduction

Inspiration in the creative field, has been wrongly misused in the common sense as an innate skill, only available to the gifted ones, the genius. On the other hand, aren't we all capable, in specific conditions, to be creative? Therefore, the present study aims to study the emergence of creativity through the contribute of some specific self-regulation strategies, such as self-leadership strategies and active delay, ultimately understanding the role of *flow* within the possible relations.

Self-regulation strategies have often been defined as the development of a set of constructive behaviors that affect one's learning. These processes are planned and adapted to support the pursuit of personal goals in changing learning environments (Schunk & Zimmerman, 1994; Baumeister, Heatherton, & Tice, 1994). Consequently, delay in certain conditions could be seen as a self-regulation strategy. Moreover, if someone is delaying on purpose and the outcome is desirable, actively delaying could be related to some self-leadership strategies, considering that it can be a self-determined, self-motived, and a self-directed process such as self-leadership (Manz & Neck, 2004). If so, the recent construct active delay (originally called active procrastination), developed by Chu and Choi (2005), that states that some individuals deliberately delay their tasks in order to feel pressure enough to perform it, could be seen as a self-regulated strategy to perform. The question is then: what is the advantage of delaying? Following Mihaly Csikszentmihaly work in his book Flow: The Psychology of Happiness (2013), the author states that enjoyment is induced at the boundary between boredom and anxiety. When the challenge generates levels of optimal anxiety, i.e. the right amount that makes us act, we may boost our willingness to work. In this sense, the time pressure that we provoke while delaying something important could be responsible for an increasing challenge that makes us act, a path that, may induce more creative productivity. Simultaneously, these are the conditions needed to the emergence of the experience of flow, a state of fully focusing on a given task, often associated with creativity (Nakamura & Csikszentmihaly, 2002).

In short, and considering the above mentioned arguments, we intend to answer the following question: How can the relation between self-leadership and individual creativity be potentiated? To answer, we consider the role that active delay and *flow* play in this relation. In fact, we consider active delay and *flow* as mediators of this

relation. As so, we assume that the relation between self-leadership and individual creativity will be sequentially mediated by active delay and *flow*, respectively.

Individual Creativity

Creativity has become essential to organizations that intend to maintain their competitive advantage in today's world that has continuous growth for and of new knowledge, ideas and accelerated rate of globalization (Kim & Mauborgne, 1999). However, the definition surrounding creativity is not consensual. The traditional psychological approach to creativity, focuses on the characteristics of creative persons (Barron, 1955; MacKinnon,1965). Other authors emphasized the importance of the environment during the process of creativity (e.g. Amabile, Conti, Coon, Lazenby, & Herron, 1996; Woodman, Sawyer, & Griffin,1993). In the organizational perspective, researchers have been progressively assuming that regular people, with normal capacities, can reach a creative performance, being their level of performance dependent on the environment (Amabile et al., 1996). Accordingly, if the convenient conditions are gathered, anybody can be creative (Shalley & Zhou, 2008; Shalley et al.,2004).

Despite these different approaches through the years, nowadays, and specifically in the organizational literature, there are some shared characteristics regarding creativity in the organizational environment. In that sense, organizational creativity has been related to individual creativity from the collaborators of a given organization, such as, for instance, a faculty and its students. New products, approaches or services are dependable on creative ideas from people who integrate an organization (Amabile, 1988). Following this, for this study we assume that individual creativity can be understood as the production of novel, useful and adaptive ideas, (Guilford, 1967; Sternberg & Lubart, 1999; Barron & Harrington, 1981; Amabile, 1983), in each domain, concerning products, services, or procedures developed by individuals (Woodman, Sawyer e Griffin, 1993). In this definition, ideas are considered creative when they are unique in a given specific organizational context, useful when they potentially add value to the organization, and applicable, when they apply to the current organization context (George, 2007; Shalley, Zhou & Oldham, 2004).

Regarding intra-individuals factors, the focus of the present study, Amabile (1983) refers three major components in her componential model: domain-relevant skills; creative-relevant processes; and finally, task motivation.

Domain-relevant-skills represent the capacity to learn certain types of domain-specific knowledge (Amabile, 1996), and requires familiarity with the domain in question—memory of factual knowledge, technical proficiency, opinions about various questions in the domain, knowledge of paradigms, performance scripts for solving problems in the domain, and aesthetic criteria (Ruscio et al., 1998).

Creativity-relevant processes are associated with a cognitive style favorable to taking new perspectives on problems, an application of heuristics for the exploration of new cognitive pathways, and a working style conducive to effort (Amabile, 1983, 1996). Ruscio and colleagues (1998) described possible behavioral indicators of creativity-relevant processes. These behaviors include goal setting and responses to challenge. In terms of responses to challenge, one may expect preparation behavior prior to group meetings and active participation in group problem-solving activities. Appropriate work orientation and cognitive style along with knowledge of heuristics for generating novel ideas will likely result in an individual asking relevant questions and offering ideas.

Task motivation includes intrinsic motivation and, a few very narrow forms of synergistic extrinsic motivation that encourage high levels of task involvement, acting as important elements of Task motivation (Collins & Amabile, 1999; Sternberg & Lubart, 1999).Amabile and colleagues (1994), found, in their study of artists, that intrinsically motivated people showed greater commitment and devoted more time to task completion. Ruscio and colleagues (1998) also found that behavior related to "involvement in the task" was associated with intrinsic motivation. Motivated individuals showed deep levels of involvement in problems by focusing on solving them, minimizing distractions, and being absorbed in work – task absortion flow (Ruscio et al,, 1998: 261).

Self-Leadership and Creativity

According to Manz and Neck (2004) self-leadership is a self-influence process, upon which individuals develop the self-direction and the self-motivation needed to

perform their tasks. It acts within the self-regulatory theoretical framework. However, while Self-Regulatory approach is more focused in describing the human behavior and how human behavior happens, Self-Leadership prescribes behavioral and cognitive strategies to enhance the effectiveness of our self-regulatory processes, i.e. our human behavior (Neck & Houghton, 2006). Accordingly, self-leadership prescribes a list of specific behavioral and cognitive strategies, divided in three complementary categories: (1) behavior-focused strategies, (2) natural reward strategies and (3) constructive thought pattern strategies (Manz & Sims, 2001; Neck & Houghton, 2006).

Behavior-focused strategies focus on the self-awareness of our own behavior, in order to manage it, gaining a particular importance when regarding to less appealing but necessary tasks (Manz and Neck, 2004). These set of strategies include self-observation, self-goal setting, self-reward, self-punishment, and self-cueing. For the present study, it was taking in account the strategies of the original measure of self-leadership and from these the ones that were adapted to the Portuguese population (Marques-Quinteiro, Curral, & Passos, 2011), not comprising self-observation, self-cuing nor self-punishment. Self-goal setting allows for the ongoing adjustment of professional and personal performance goals regarding environmental cues. Self-reward, energize our pursuing of self-settled goals (Manz & Sims, 1980; Manz and Neck, 2004). These rewards can be tangible (e.g. a trip in at the end of the year), or intangible (e.g. mental self-congratulation).These rewards will act as goal-catalyzers, as a motivational mental-beverage.

Natural Reward Strategies focus on the positive side of a giving task. The motivation and pleasure that comes from the task itself. We can either create a task surrounded-environment that increase the satisfaction of doing the task; or we can change our perspective toward the positive aspects of the task, making it more interesting to perform (Manz & Neck, 1999; Manz & Sims, 2001). Strategies such as these, can either incorporate more pleasurable features in the task, or help us focus in the bright side of a given task, which might help making externally imposed tasks (e.g. some course essay, or test) seem more internalized and less externally controlling.

Constructive thought pattern strategies focus on three aspects; a) beliefs and assumptions; b) mental imagery; and c) self-talk. Regarding beliefs and assumptions, constructive though pattern strategies help to look to our belief systems and improve it

through self-analysis. Moreover, mental imagery of successful performance outcomes improve the odds on an accomplishment of a giving task. Also, self-talk can encourage us to act more adaptively, facilitating positive thoughts (Houghton & Neck, 2002; Neck & Houghton, 2006), and positive affection, which can be turned into good feelings who will stimulate readiness to play, try new things and experiment.

In the past few decades, literature has suggested that a relationship between Self-Leadership and Creativity exists (e.g. Manz & Sims, 2001; Carmeli, Meitar & Weisberg, 2006) Authors have argued that the use of self-leadership strategies may act as an antecedent of creativity (DiLello & Houghton, 2006; Neck & Houghton, 2006). When employees are able to motivate themselves to achieve higher levels of performance and effectiveness (Manz, 1986), acting in order to take decisions, identifying opportunities and challenges, and putting effort to solve any given problem, all act as antecedent for creativity (Pearce and Manz, 2005).

Specifically, individual creativity can result from an empowering leadership approach that stimulates self-leadership (Manz & Sims, 2001). In support of this suggestion, a number of researchers have observed that creativity is encouraged when individuals are more autonomous in their environment, experiencing a sense of ownership, and perceiving control over their ideas and work processes (e.g., Amabile, Conti, Coon, Lazenby, & Herron, 1996). Regarding self-leadership characteristics, Shalley (1991) observed that subjects with well-defined goals (self-goal setting) showed higher levels of creativity than subjects with no goals.

Furthermore, In two recent studies findings suported that constructive thought pattern strategies (e.g., optimistic thinking) and behavioural focused strategies (such as self-goal setting) – two out of three key facets of self-leadership theoretical framework - influenced creativity (Politis & Breman, 2011; Politis, 2015).

Taken together these arguments suggest that:

H1: Self-leadership,will have a positive relationship with individual creativity.

Active Delay and Creativity

Active delay (Chu & Choi, 2005; Corkin, Yu, & Lindt, 2011) is a recent construct, developed based on the framework of procrastination, considered as a trait or behavioral disposition to delay a performing task, regulated by internal norms of delay, resulting in a postponing of important activities (Milgram, Sroloff, & Rosenbaum, 1988). However, this new construct tries to explain why delaying important tasks can sometimes be effective to certain people (Chu & Choi).

A study from Schraw, Wadkins, and Olafson, (2007) has suggested that individuals (students) report delaying their work on purpose, because they work better under pressure. Considering this, postponing a task can be rational and intentional, not affecting the outcome (Schraw, Wadkins, & Olafson, 2007; Simpson & Pychyl, 2009).

Chu and Choi (2005) pointed out that some people, even when they start working in the last minute, can still finish their work on time. Consequently, they suggested two kinds of procrastinators: Passive procrastinators and active procrastinators (also called active delayers). Passive procrastination conceptualizes individuals who don`t intend to postpone their actions but they end up doing it due to the lack of capacity to make quick decisions. As a result, they become pessimist, especially about their capability of being well succeed (lack of self-efficacy) (e.g. Ferrari, Parker & Ware, 1992). Conversely in the positive spectrum of procrastination (active delay), individuals delay their activities on purpose, focusing in other tasks, working afterwards under pressure, because when faced with last minute tasks, they feel more motivated and engaged (Chu & Choi, 2005). According to the authors, this active delay can be understood as a multifaceted phenomenon which includes cognitive (decision to procrastinate), affective (preference for time pressure) and behavioral (they can complete the task right on time) components that differ from passive procrastinators, resulting in substantially different outcomes. Compared with passive procrastinators, active delayers report lower levels of stress and task drop out (Chu & Choi, 2005).

In Subotnik, Steiner and Chakraborty (1999) study regarding delay at work, 50% of the individuals (all coming from highly creative fields) referred to delay constantly their work on purpose, not perceiving that as a menace to their creative outcome.

Additionally, they reported to do so in order to fulfill the task. In the same study, in the so called "Elite Group" (composed by individuals with high expectation for creative productivity in their work), only a third referred to not delay their tasks at work, while the others who admitted their delay reported that they still saw themselves as highly productive individuals.

Regarding the academic environment, Seo (2013) found a significant relation between active delay and motivation for academic achievement. In their study, students with autonomous motivation were engaged with active delay strategies. Corkin, and colleagues (2011) also found evidence of a positive relation between active delay and autonomous motivation.

Hence, active delay seems to be related to a more autonomous motivation, such as identification, the mechanism of extrinsic motivation representing the highest level of self-determination. Identification occurs when a behavior is valued by the individual and is perceived as being chosen by that individual. It is considered as extrinsic motivation because the activity is performed as a means to an end and not for its own sake (Hayamizu, 1997) – e.g. I study because I want to get an A at Calculous. According to previous research (Amabile, 1996; Collins & Amabile, 1999; Sternberg & Lubart, 1999), identification, as a specific autonomous external motivation, has been related to individual creativity, acting as an important element of one of the domains of the Amabile´s Componential Model of Creativity (1983), task motivation. Furthermore, individuals who have been linked to more creativity outcomes have reported some of the following characteristics: ability to focus on one thing for an extended period of time (Csikszentmihalyi, 1996), ability to regulate their effort, and keeping high energy levels during his work (Amabile, 1996). Attributes that also have been linked to individuals engaged in active delay strategies (Kim & Seo, 2013).

Altogether, some individuals often report to postpone their activities on purpose, not affecting their creative outcomes (Subotnik, et. al, 1999) Also, these individuals were related to an autonomous type of motivations, frequently linked to individual creativity (Seo, 2013; Amabile, 1996; Collins & Amabile, 1999; Sternberg & Lubart, 1999) Given that, the following is hypothesized:

H2: Active delay, will positively be associated with individual creativity.

Flow and Creativity

Flow is the subjective experience of engaging in a given task by tackling a series of goals, continuously processing feedback (i.e. monitoring the progress of a given activity), and adjusting further actions according to the feedback (Nakamura & Csikszentmihalyi, 2000). In order to be in flow it is necessary to balance our perceived skills to the perceived challenge of the task (i.e. study for a test, complete a report from work). Otherwise, when challenge surpass perceived skills, the individual might experience a high level of anxiety, and when one perceives his skills higher than the challenge at hand, one might experience boredom. Subsequently, only if challenge matches the skills perceived by the individual (Berlyne, 1960), one may enter in a subjective state (flow) and keep that state as long as one can keep away from the distractors, since focus and concentrations are the keys to achieve and keep the flow going (Csikszentmihalyi, 1997).

In short, the experience of flow is occurring when one is experiencing the following characteristics (e.g. Nakamura & Csikszentmihalyi; Csikszentmihalyi, 1997):

- Intense and focused concentration on what one is doing in the present moment;
- Merging of actions and awareness;
- Loss of self-awareness or self-consciousness;
- A sense that one can control the situation, perceiving that one can act accordingly to what will subsequently happen;
- The feeling of being loss in time (i.e. time has passed faster than what we perceived during the task);
- Feeling the activity as intrinsically rewarded, doing the activity for the activity itself and not for the outcome. In this case, applied on the academic field, given the work of Kim and Seo (2013), it can be suggested that the challenge of doing much in a short period is what motivates the students for cramming to pass a course.

Flow, has been related to creativity mostly in the performance arts, art composition and literature, and in brilliant individuals in general (e.g. Csikszentmihalyi, 1997; MacDonald, 2006; Hamilton, 2013). For instance, MacDonald (2006) found that increased levels of flow are related to increased levels of creativity in musical

composition. Despite that, we can generate similar levels of challenge necessary to experience flow, outside the arts field. As it was stated, when approaching the deadline we will increased the level of challenge, and when it´s balanced with our level of perceived skills it can, in fact, potentiate the experience of flow (Kim & Seo, 2013).

Additionally, according to task motivation domain of the already referred componential model (Amabile, 1983) of creativity, motivated individuals showed deep levels of involvement in problems by focusing on solving them, and being absorbed in the task at hand, a characteristic typical in individuals engaged in flow (Ruscio et al,, 1998: 261). Ruscio and colleagues (1998) also described possible behavioral indicators of creativity-relevant processes – other domain of the componential model (Amabile, 1983). These behaviors include goal setting and responses to challenge, two important traits of the experience of flow (Nakamura & Csikszentmihalyi, 2000).

Taken together these findings suggest that:

H3: Flow will have a positive relationship with Individual Creativity

Active delay: Its role in the relation between self-leadership and creativity

Until now, there is no record of direct attempts to relate self-Leadership strategies to active delay. Nevertheless, since Self-leadership was built upon the self-regulation theoretical framework, it´s possible to address the self-leadership-active delay relation under the self-regulation strategies prism.

On the basis of the above circumstances, individuals that reported the utilization of active delay strategies, referred their predilection to work under pressure and make deliberate delay decisions (Schraw et al., 2007; Simpson & Pychyl, 2009). Moreover, active delayers tend to have higher levels of purposive use of time, time control, and self-efficacy and are more likely to experience positive outcomes, which is desirable in individuals, engaged in self-leadership. (Stewart, Carson, & Cardy, 1996; Neck & Houghton, 2006; Chu & Choi, 2005). Thus, in previous studies, active delay was positively related to some adaptive self-regulatory facets (i.e., self-efficacy, and effort-regulation). Being effort regulation, the propensity to keep the attention and effort toward goals, despite potential distractions (Chen, 2002); it´s a self-regulation process

that boost the conservation of planned actions (Kuhl, 1985), acting as a predictor of outcome success (Doljanac, 1994; Lee, 1998).

In short, considering the main domains of active delay (cognitive, behavioral and affective) (Chu & Choi, 2005) and their relation to self-regulation (Choi & Moran, 2009; Chu & Choi, 2005, Corkin et al., 2011; Kim & Seo, 2013; Seo,2013) we can assume that they are in line with self-leadership. Namely, if we consider that self-leadership arises when individuals identify and interpret a situation, decide to engage in behaviour in order to align procedures with standards - (decision to delay a certain task) -, monitor actions and cognitions - (preference for time pressure) - to encourage - (motivate) - the desired behaviour - (to complete the task right on time) - , and then assess how the behaviour influences the situation (Manz, 1986). In practice an individual may use self-leadership to actively delay. Therefore, we hypothesize that:

H4: Self-leadership will positively be associated with active delay.

Moreover, taking into account what was previously said, for certain individuals, delaying actively their work may be a self-determinate and self-regulation strategy (Corkin, Yu, & Lindt, 2011; Kim, & Seo, 2013) in order to motivate themselves to deliver their works (Chu & Choi, 2005; Seo, 2013), boosting their levels of creativity (Subotnik et. al, 1999). Given that, active delay as a self-regulation strategy in line with-self-leadership, as a set of general strategies used to self-motivate and self-influence towards a desirable goal may act as a path to individual creativity and therefore we hypothesize that:

H5: Active delay will positively mediate the relationship between self-leadership, and individual creativity.

Flow: its role in the relation between self-leadership and creativity

Regarding the relation of flow with self-leadership, studies have been suggesting that increased self-leadership corresponds to better affective responses (e.g. Stewart, Courtright & Manz 2011). More specifically, self-leadership prompts positive affective-motivational responses, effective in a wide range of environments and often triggered by challenging work, resulting in engagement at work (Unsworth & Mason, 2012; Leiter & Bakker, 2010). Work engagement has been conceptualized as a positive active

affective-motivational state (Bakker, Albrecht, and Leiter, 2011; Schaufeli, Salanova, Gonza´lez-Roma, & Bakker, 2002) which concerns a positive work-related state, where an individual employs vigor, dedication and a sense of absorption (Schaufeli, et al., 2002), which is a part of any type of challenging work. Moreover, recent studies have suggested that employees who are engaged with their work have higher levels of energy and self-efficacy, acting in order to achieve challenging goals. Recently, relations between self-leadership and work engagement were identified (Gomes, Curral, & Caetano, 2015). Despite being related to work engagement, it might be possible to do a parallelism with flow, due to the similarity of some characteristics. As work engagement, flow is linked to positive affect (Skinner & Brewer, 2002) as well as intrinsic motivation (Elliot & Harackiewicz, 1996), and the need for challenging and self-perceivable reachable goals (perceived self-efficacy) (Bakker, Albrecht, Leiter, 2011; Leiter & Bakker, 2010). Therefore, when challenges are balanced with skills, attention involvement (referred as task absorption) is attached to the task at hand (e.g. self-focus; monitoring time; etc.). This task absorption allows the person to enjoy the experience of being fully engaged in the activity (Deppe & Harackiewicz, 1996; Elliot & Harackiewicz 1994; Harackiewicz, Baron & Elliot, 1998), and thus, it might stimulate the entrance in the state of flow, while doing work-related activities, given the proximity of the requirements needed to achieve this state, especially the challenge-skill balance facet. Taking this in account, we hypothesize the following:

H6: Self-leadership will be positively associated with flow.

Altogether, flow as a state of fully immersion and attention involvement in a given task (Abuhamdeh, & Csikszentmihalyi, 2011), can be understand as a positive affective-motivational response (Bakker, et al., 2011; Schaufeli et al., 2002), resulted of an increased self-leadership (Unsworth & Mason, 2012; Leiter & Bakker, 2010). Furthermore, individuals who experience flow in their activities are often seen as more autonomous motivated toward a goal, which has been positively related to creativity (Moneta, 2012).

Thus, it is hypothesized:

H7: Flow will positively mediate the relationship between Self-Leadership, and Individual Creativity.

Active Delay and Flow

Procrastination has been related to the cramming-burst of studying immediately before an exam (Sommer, 1990. Also, in terms of academic outcomes (e.g. grades), Brinthaupt, and Shin (2001) found a positive relation between cramming and flow. Later, Seo (2013), in a study that involved active delayers, suggested that individuals who actively delay their tasks, experience flow. Specifically, individuals who used active delay strategies engaged in flow through challenge-skill balance, a key facet of flow. Thus, active delayers intentionally delayed their work and enjoyed the feeling of being challenged, due to the time pressure, which resulted in increased level of focus in the task, which made the individuals experienced flow (Kim & Seo, 2013). LePine, Podsakoff, and LePine, (2005) also argued that individuals under time pressure will increase their effort because the demand is appraised as a challenge which has the potential for personal growth, and which is connected to positive emotions (characteristic linked to flow).

Further investigations have also pointed out challenge – as a pre-condition of flow (Csikszentmihalyi & LeFevre, 1989), - as a facilitator of performance through the direction, level and effort regulation (a self-regulation facet often associated to active delayers (Seo, 2013; Kim & Seo, 2013) toward work goals.

Altogether, taking the previous arguments, since active delay includes time pressure and effort regulation strategies, increasing the demand of the activity (increasing the level of the challenge, a pré-condition of flow) associated to positive emotions of personal growth (Csikszentmihalyi & LeFevre, 1989; LePine, Podsakoff, & LePine, 2005; Kim & Seo, 2013), we build the following hypothesis:

H8: Active Delay will be positively associated with flow.

Overall, considering that (1) there is a relationship between self-leadership and individual creativity (Manz & Sims, 2001; Carmeli, Meitar & Weisberg, 2006; Politis & Breman, 2011; Politis, 2015), that (2), active delay, in the form of self-leading strategies, can be seen as an adaptive self-regulating strategy for certain individuals (Corkin, Yu, & Lindt, 2011; Seo, 2013), which (3), in turn is positively related to the flow (Kim and Seo, 2013); and that (4), and both flow and active delay have been

positively linked to creativity (Subotnik, et. al, 1999; Csikszentmihalyi, 1997; MacDonald, 2006; Hamilton, 2013), we hypothesize the following:

H9: Active Delay and Flow will, respectively, serially mediate the relation between self-leadership and creativity.

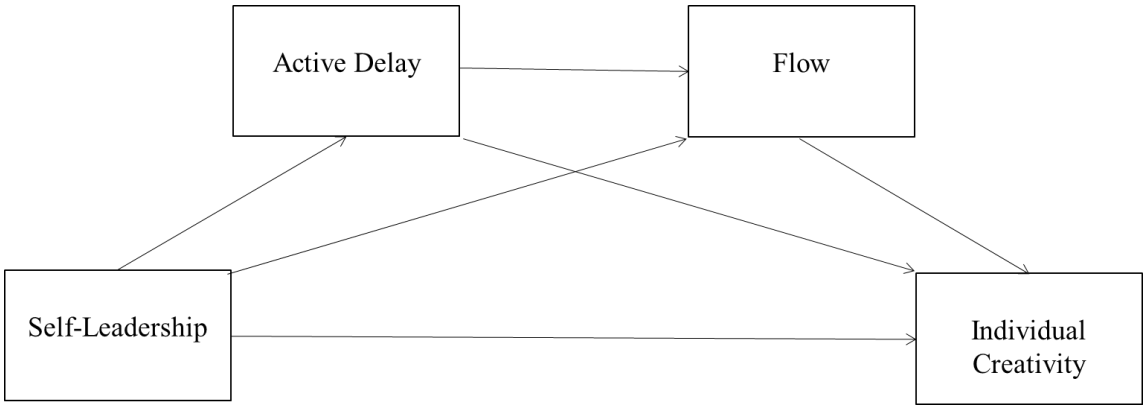

Figure 1. Conceptual diagram of the Model presented with two mediators

Methodology

Participants

In the present study, participated 116 participants, University students, from the University of Lisbon, who were enrolled in the 2nd year of the Psychology Degree at the Faculty of Psychology, 83% of whom were females. Their ages ranged from 18 to 59 years of age (M= 21.63, DP=XX). From the initial sample of 116 participants, only 87 were included in the present study, having completed and answered what was initially stablished.

Procedure

The data collection took place in a classroom, at the end of each class from a psychology 2nd year´s course, after the consent had been obtained from the faculty's ethics committee as well as the professor responsible for the class. The participants in this sample who completed the questionnaire voluntarily, were fully informed about the aim of the study, and were assured of the confidentiality of their responses (their individual data would not be disclosed).

The data was collected at two distinct points in time.

Since the first time, students were told that this investigation had the goal to compare styles of learning regulation to productivity outcomes such as creativity. Furthermore, participants who decided to participate in the study had 0.3 extra points in their final grades. Also, it was added that the author of the study would answer every questions regarding the study after the application of the study was carried out. The e-mail from the author of the study was included in the informed consent, which was signed by the participants. This consent was included to assure the confidentiality of the information gathered in the study. Moreover, in the informed consent, every participant was informed about the activities they would be enrolled into, if they accepted. Finally, in the same form, it was given the possibility for the participants to leave the study whenever they felt like leaving.

After the collection of all the informed consents, we proceeded with the data collection.

In the first moment, the questionnaire comprised three sections, one regarding demographic data and the others regarding self-leadership and active delay. After fulfilling the questionnaire, students were assigned an individual work, previously defined in collaboration with the Professor in charge of the class, with a clear deadline of 3 weeks. This individual work corresponded to a case study.

In the second moment of data collection (three weeks later), together with the gathering of each individual work, another questionnaire was distributed, comprising two sections, one concerning flow and the other regarding demographic data. The individual work, was later assessed in terms of creativity.

Measures

Self-Leadership. To assess Self-Leadership 18 items from the Revised Self-Leadership Questionnaire for the Portuguese Context (Marques-Quinteiro, Curral & Passos, 2011) were used. The items reflect the three dimensions of self-leadership, and their corresponding strategies: behavior focused strategies – self goal setting (three items, e.g., "I establish specific goals for my own performance"); self-reward (three items, e.g., "When I do an assignment especially well, I like to treat myself to something or activity I especially enjoy") –, constructive thought pattern strategies - evaluating beliefs and assumptions (three items, e.g., "I think about my own beliefs and assumptions whenever I encounter a difficult situation"); self-talk (three items, e.g., "Sometimes I find I'm talking to myself (out loud or in my head) to help me deal with difficult problems I face"); visualizing successful performance (three items, e.g., "I visualize myself successfully performing a task before I do it") -, and natural reward strategies (three items, e.g., "I find my own favorite ways to get things done"). Items were scored on a 7-point Likert scale ranging from 1-totally disagree to 7-totally agree.

A second factor-order principal axis factoring (PAF) analysis with oblimin rotation on the three self-leadership dimensions was conducted in order to obtain a general self-leadership measure, this analysis followed the example of the study conducted by Gomes, Curral and Caetano (2015). The advantage of this method is that it takes into account the factor loadings of each of the three self-leadership dimensions, while calculating the factor score. This analysis resulted in a one-factor solution that

explained 51% of the variance. The general self-leadership scale had good internal consistency (α=0.88).

Active Delay. Active delay was assessed with the 16-item Active Procrastination Scale (Choi & Moran, 2009). The referred questionnaire consisted of 16 items to assess four dimensions of active procrastination: outcome satisfaction (four items, α = .66, e.g., "I don't do well if I have to rush through a task" [reverse coded]); preference for pressure (four items, α = .81, e.g., "It's really a pain for me to work under upcoming deadlines" [reverse coded]); intentional decision to active delay (four items, α = .66, e.g., "I intentionally put off work to maximize my motivation"); and ability to meet deadlines (four items, α = .72, e.g., "I'm often running late when getting things done" [reverse coded]). These are assessed in a 7-point Likert-type scale ranging from 1 = strongly disagree, to 7 = strongly agree. For the current application, the 16 original items of the active procrastination questionnaire (Choi & Moran, 2009) were translated into Portuguese by two experienced researchers, knowledgeable in active delay theory and fluent in English language. The Portuguese version was later translated back to English by a psychologist with proficiency level in English language to ensure the accuracy of the translation. It was later applied a exploratory factor analysis in order to evaluate the internal structure of the questionnaire. The factor extraction was carried through a principal components analysis with varimax rotation. The exploratory factorial analysis retained a single factor, explaining 63 % of the total variation, including seven out of the 16 items initially proposed. An alpha of 0.76 revealed a good internal consistency of the instrument.

Flow. In order to access flow the Portuguese version of the Dispositional Flow Scale – 2 (DFS-2) questionnaire, initially developed by Jackson and Eklund, (2002; 2004) and later adapted to the Portuguese context by Gouveia, Pais-Ribeiro, Maruqes and Carvalho, (2012) was used as a measure of the individual tendency to experience flow. It contained 36-items (4 for each subscale) designed to evaluate the nine flow dimensions: challenge-skill balance (e.g., "I am challenged, but I believe my skills will allow me to meet the challenge"), action-awareness merging (e.g., "I do the activity automatically without thinking too much"), clear goals (e.g., "I know clearly what I want to do"), unambiguous feedback (e.g., "It is really clear to me how my performance is going"), concentration on task (e.g., " My attention is focused entirely on what I am

doing"), sense of control (e.g., "I have a sense of control over what I am doing"), loss of self-consciousness (e.g., "I am not concerned with what others may be thinking of me"), time transformation (e.g., "The way time passes seems to be different from normal"), and autotelic experience (e.g., “I really enjoy the experience"). Participants were asked to think about if they have experienced the characteristics described in each item while they were fulfilling the given assignment and to rate it using a 7-point Likert scale ranging from 1 – strongly disagree to 7 –strongly agree.

A second factor-order principal axis factoring (PAF) analysis with oblimin rotation on the nine Flow dimensions was conducted in order to obtain a general flow measure. The advantage of this method is that it takes into account the factor loadings of each of the nine Flow dimensions, while calculating the factor score. This analysis resulted in a one-factor solution that explained 52% of the variance. The general Flow scale had good internal consistency (α=0.95).

Individual Creativity. To access individual creativity, the following study case was used: “Please, read the following problem carefully. We request you to suggest creative ideas in order solve the following problem: “Imagine you are a theatre director, being equally responsible for the artistic and finance direction. Despite the fact that you acknowledge the importance of both responsibilities, your talent and interest have guided you mainly to assure the maximum quality of your theatrical productions. During the years, you have been responsible for the effective construction of numerous successful productions. However, during the last week you received a report from an accountability firm dispatched to evaluate the financial situation of your theatre. At that point, you were surprised to find out that the theatre expenses greatly surpassed the income and you were shocked with the report conclusion, claiming that, unless you reduced the expenses, the theatre would have to close within a year. Immediately after receiving this warning, you started to develop a strategy to reduce the expenses. Your main motivation was clear: “the theatre cannot close doors”. Following this, please write down your ideas”.

Regarding the ratting of the case study in order to access individual creativity, according to the creative outcome generated from the participants answers, two specialists in creativity field rated it using a Likert scale with 7 points (Braia, Curral & Gomes, 2015). Given that the participants had generated several different ideas, each

idea was evaluated individually, and at the end the mean average of the three creativity dimensions was generated in order to determinate the global creativity performance of each participant. The three dimension evaluated were the following: originality (to what extent is this idea novel (i.e. It´s not being applicable in the present to the problem presented), utility (to what extent is this idea useful as a solution for the problem presented) and applicability (to what extent is this idea applicable to the problem presented). In this process the evaluator did not have access to the identity of the participants, in order to diminish the the result bias. Similar procedures have been used in previous studies (e.g. West & Anderson, 1996).

Results

Table 1 presents the variables means and standard deviations, as well as the correlation matrix.

Table 1 shows that self-leadership had a positive correlation with flow ($r=0.339$; $p<0.01$).

Table 1. *Means, standard deviations, and intercorrelations among study variables*

	Mean	S.D.	1.	2.	3.	4.
1. Self-Leadership	5.24	.52	-			
2. Active Delay	4.20	1.24	-.071	-		
3. Flow	4.81	0.76	.339**	-.157	-	
4.Individual Creativity	4.66	0.80	-.096	.003	-.020	-

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

To test Hypotheses 1 to 9, we followed the methodology for the estimation of indirect effects in double mediation models, with multiple mediators using PROCESS, for SPSS (Hays, 2013). Total, direct, and single-step indirect effects (specific and total) were estimated for a predictor variable (i.e., self-leadership) on an outcome variable (i.e., individual creativity) through proposed mediator variables (i.e., active delay and flow). It also controls for one or more variables. The bootstrap method is considered a more rigorous approach than the three-step multiple regression approach (Baron and Kenny, 1986) and the Sobel test (Sobel, 1982) for estimating mediation and indirect effects. This is so, because the bootstrap method requires only: (1) the existence of an effect to be mediated, and (2) that the indirect effect has to be statistically significant in the direction predicted by the mediation hypothesis. For this study, we repeated the bootstrap process for the recommended minimum of 5,000 times. Table 2 presents these results.

Hypothesis 1, “self-leadership will have a positive relationship with individual creativity” (B=-.147; p>0.01); hypothesis 2, “active delay, will be positively related with individual creativity” (B=-0.001; p>0.01); hypothesis 3, “flow will have a positive relationship with individual creativity” (B=-.002, p>0.01); hypothesis 4, “self-Leadership will be positively associated with active delay” (B= -0.168; p>0.01); hypothesis 5, “active delay will positively mediate the relationship between self-leadership and individual creativity” (B=0.000; p>0.01); hypothesis 7, “flow will positively mediate the relationship between self-leadership, as a general combination of a set of strategies, and individual creativity” (B=0.007; p>0.01); hypothesis 8, “*Active Delay will be positively associated with flow.*” (B=-0.082, p>0.01) and-, hypothesis 9, “active delay and flow will, respectively, serially mediate the relation between self-leadership and individual creativity” (B=0.000; p>0.01) were not be verified.

However, hypothesis 6, “*Self-leadership will be positively associated with flow.*” (B=0.478, p<0.01), was corroborated since self-leadership positively predicted flow.

In sum, Regarding the test of Hypotheses 1 to 9 (Table 2), self-leadership only positively predicted flow (B=0.478, p<0.001). No further significant relations were found in the present model. Overall, the proposed model did not explain ($AdjR^2$=0.0093, p=0.3384) the variation of individual creativity.

Table 2. *Mediator analysis for individual creativity with bootstrap re-sampling.*[a]

		Individual Creativity			
		B	t-test	Bootstrap	
				LLCI	ULCI
B path a =	Self-leadership on Individual Creativity	-.147	-.9627	-.450	.156
B path b =	Self-leadership on Active Delay	-.168	-.6651	-.670	.334
B path c =	Self-leadership on Flow controlling Active Delay	.478*	3.296	.190	.770
B path d =	Active Delay on Individual Creativity controlling Self-leadership and Flow	-.002	-.026	-1.29	.126
B path e =	Active Delay on Flow controlling Self-leadership	-.082	-1.092	-.232	.067
B path f =	Flow on Individual Creativity controlling Active Delay and Self-Leadership	-.002	-.026	-.219	.247
B path g =	Direct effect of X on Y	-.154	-.970	-.469	.162
B path h =	Indirect Effect of Self-leadership on Individual Creativity mediated by Active Delay	.000	_____	-.038	.044
B path i =	Indirect effect of Self-leadership on Individual Creativity mediated by Active Delay and Flow	.000	_____	-.004	.014
B path j =	Indirect effect of Self-Leadership on Individual Creativity mediated by flow	.007	_____	-.042	.142

Note: [a]Bootstrap resampling=5000

*p<0:01

Discussion

The present study proposed a model that connects Self-leadership to individual creativity, through the mediation of active delay and flow.

The subject of creativity and its link to self-leadership is not new (DiLiello, 2006; Neck, & Houghton, 2006). However, this study intended to find new relationships with constructs that yet lack research on them, such as active delay. Furthermore, with the inclusion of flow, we tried to explore another relationship with self-leadership, which for our knowledge has not been study yet. Thus, the results of the present study pretend to increase the body of literature of recent constructs such as active delay, find new relations with self-leadership, and find the effect that active delay and flow have on individual creativity.

Regarding the studied model, results failed to support its existence, because of lack of statistical evidence, neither flow nor active delay had a mediation effect between self-leadership and individual creativity. Moreover, the present results also contradict previous research that argued for the link between self-leadership and individual creativity (e.g. DiLiello, & Houghton, 2006; Carmeli, Meitar, & Weisberg, 2006). Possible explanations for this might be related to the task designed to access creativity, since it may not be challenging and motivating enough (Amabile, 1983, 1996), and the goal was not previously stablished (Shalley, 1991; Leung,Chen, & Chen, G., 2014), i.e. everybody despite the effort put on the task would gain the same points in the final grade of the course. On the other hand, the fact that it referred to a case study regarding general management, and not related to their areas of expertise, may have compromised their creativity (Amabile, 1983, 1996). Together, the lack of objective and motivation, due to the low perceived challenge, and expertise on the field, could have contributed for the present results. These same reasons can explain why neither active delay nor flow had a relation with creativity.

Concerning Active Delay and its association with Individual Creativity, i.e. Individuals who use active delay strategies will reach higher levels of individual creativity in comparison with individuals who do not use these strategies, the results failed to support that relationship. A possible explanation could be built upon the method used to access creativity, since as it was reported above, it did not take in

account some facets related to creativity (domain-relative skills and task motivation (Amabile, 1983). Therefore, the exercise might not be itself perceived as important and motivated enough to generate the behaviors expected that elicit individual creativity.

Following these reasons, the relationship between flow and creativity as stated - i.e. individuals whom experience flow will show a higher level of individual creativity in their activity in comparison to the individual who do not experience this state -, also did not find support in data, which could be explain by the lack of one of the requirements of flow, since an activity must be perceived as challenging to trigger this mechanism (Nakamura & Csikszentmihalyi, 2000).

Likewise, the relation between self-leadership and active delay was not supported by the data. This result adds for the discussion weather active delay is a self-regulatory strategy, or not (Chu & Choi, 2005; Corkin, Yu, & Lindt, 2011). Since self-leadership well-documented as a set of self-regulatory strategies, the lack of relatedness with active delay here presented, can contribute to dense the argument that active delay may not be a self-regulatory strategy, contradicting the investigation carried out by Kim and Seo (2013), who found relation between active delay (referred as active procrastination) with some self-regulatory strategies, specifically effort regulation. Nevertheless, one of the dimensions of active delay is outcome satisfaction, and Chu and Choi (2005) found that active procrastination is positively related to academic achievement. Since high performance is attributed to self-regulatory learning (Zimmerman, 1998), some questions need further investigation. Namely, whether active delay is a self-regulatory strategy or not.

On the other hand, as hypothesized in this study, self-leadership, as a general set of strategies is positively related to flow. If that so, individuals that are self-leaders might be more likely to experience the state of flow. These findings partially reinforce studies from authors such Deppe and Harackiewicz (1996), Elliot and Harackiewicz (1994), and Harackiewicz and Elliot (1998) that state that when challenges are balanced by skills, attention involvement (referred as task absorption) is attached to the task at hand (e.g. self-focus; monitoring time; etc.). Consequently, this task absorption allows the person to enjoy the experience of being fully engaged in the activity. In this sense, these findings go further than previous studies in a way that links the construct of flow to self-leadership, which had not yet been done.

As to active delay and its relation with flow, and in contradiction with previous studies (Kim & Seo, 2013; Seo, 2013), results were not significant. Thus, the suggestion of using active delay in order to reach flow, since the level of challenge and skills are balanced, triggering cognitive flow (Schraw et al., 2007), have not found relation in the present study. A viable justification concerns the fact that the questionnaire used to access flow (Gouveia, Pais-Ribeiro, Maruqes & Carvalho, 2012) was related only to the experience resulted from answering the study case. Since the task itself may not be challenging enough, and the time pressure (who could add the sense of challenge) (Csikszentmihalyi, 1997; Nakamura & Csikszentmihalyi, 2002) may not be sufficient (the gap of three weeks was during Easter holidays), the emergence of flow and subsequent relation to active delay set of strategies could not be accessed properly. Therefore, further research will benefit if conducted using a more suitable challenge to guarantee the emergence of flow, or perhaps the utilization of an instrument that measures the general emergence of flow in a broader range of activities and not specifically only at one. Since it is still a field that lacks studies, it is important to investigate further the relations (or the absence of it) between active delay and flow, and the subsequent consequences of that relation, considering its existence.

Limitations and Future Research Implications

One limitation in this study was that self-leadership, active delay and, flow were measured using a single respondent´s method (self-report questionnaires), which, due to factors such as social desirability of the participant´s answers, may cause common method biasing, i.e., variance that is attributable to the measurement method rather than to the constructs the measures represent (Podsakoff, Mackenzie, Lee & Podsakoff, 2003). Despite that, several authors have found no significant differences between self and supervisor ratings (Shalley, Gilson & Blum, 2009; Bakker, Demerouti & Verbeke, 2004), which may also suggest that common-method biasing is not an omnipresent phenomenon whenever measures are obtained through single responses. Nevertheless, future researchers should consider the creation and validation of a greater number of methods and instruments to complement the self-reporting questionnaires used to measure these three variables.

Furthermore, the task used to access creativity may not be suitable to evaluate that construct. Since it was a general management study case, participants may have

lacked the knowledge regarding it and, therefore, the emergence of creativity may have been dependent on their general knowledge of the subject, variable that the present study did not take into account. Also, the task might have been seen by the participants as not challenging and motivating (Amabile, 1983, 1996) enough and a goal was not previously stablished (Shalley, 1991; Leung,Chen, & Chen, G., 2014), i.e. everybody despite the effort put on the task would gain the same points to the final grade of the course and it wouldn't count for their final grade in an appeling way. Finally, the given three weeks to fulfill the task, might influence the feeling of time pressure and as a consequence can contribute to poor levels of intrinsic motivation to complete the task (Hammond, Neff, Farr, Schwall, & Zhao, 2011). Taken together, these arguments could explain the lack of correlation with creativity. Future research should take that in account and find a more challenging task, related to the field of expertise of the participants, and reduce the deadline, to induce more time pressure, in order to increase the challenge (e.g. Leung, et al.., 2014) and therefore motivation (e.g. de Jesus., Rus, & Imaginário, 2013; Hennessey, 2015; Ryan & Deci, 2000).

Other limitations comprise the impossibility to generalize these findings to other student populations or to nonacademic settings, since the participants in this study included only undergraduate college students from the 2nd year of the psychology degree. It would be valuable for future researchers to investigate whether or not the findings obtained in this study could be generalized to other student populations and individuals in other settings.

Furthermore, it is not possible to confirm direct causality among the variables studied in the present study, due to the lack of control of external variables during the period between the first and the second moment of data collection. This lack of control could be overcome by using multilevel repeated measures during the period between the two data collections, This would access the emergence of flow and active delay strategies in each participant.

Concluding Remarks

To summarize, it was argued that self-leadership positively individual creativity, and that active delay and flow altogether acted, respectively, as sequential mediators in the relationship between self-leadership and individual creativity. However, the results did not show evidences for most of these relations, with the exception of self-leadership and flow, which revealed a positive relation. Further investigation should explore how self-leadership affects flow. On the other hand, despite the lack of evidences, self-regulation strategies (such as self-leadership strategies) and its relation to active delay and individual creativity should benefit from more research, following previous studies who tried to relate self-leadership and individual creativity (Neck & Houghton, 2006; DiLiello & Houghton, 2006) and, active delay with positive outcomes – individual creativity (Seo, 2013; Chu & Choi, 2005; Corkin, & colleagues, 2011; Kim & Seo, 2013).

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